

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 September 2005 (15.09.2005)

PCT

(10) International Publication Number
WO 2005/085401 A1

(51) International Patent Classification⁷: C10M 145/22,
161/00, 169/04, 129/74

(21) International Application Number:
PCT/GB2005/000700

(22) International Filing Date: 25 February 2005 (25.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0404535.7 1 March 2004 (01.03.2004) GB

(71) Applicant (for all designated States except US): IMPE-
RIAL CHEMICAL INDUSTRIES PLC [GB/GB]; 20
Manchester Square, London W1U 3AN (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): OLDFIELD, Andrew,
Simon [GB/GB]; Flat 1, Oxford Road, Kidlington, Oxon,
OX5 1BL (GB).

(74) Agent: RALPH, Julie, Diane; Uniqema Intellectual Prop-
erty Dept., Wilton Centre, Wilton, Redcar, Cleveland TS10
4RF (GB).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA,
ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: ANTIWEAR AUTOMOTIVE FORMULATIONS

(57) Abstract: An automotive engine oil comprising a base oil and an antiwear additive system comprising an ester. The antiwear additive system preferably further comprises a phosphorus-containing and/or sulphur-containing antiwear additive. The antiwear additive system of the invention has superior antiwear properties and also reduced metal, phosphorus and sulphur levels compared to current commercial antiwear agents such as ZDDP.

WO 2005/085401 A1